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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,343	02/05/2001	Samuel A. Marquiss	LJL 34601	6560

7590 06/06/2003

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EXAMINER

HANDY, DWAYNE K

ART UNIT	PAPER NUMBER
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1743

12

DATE MAILED: 06/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,343

Applicant(s)

Marquiss et al.

Examiner

Dwayne K. Handy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 9, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 30-39, and 46-48 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 30-39, and 46-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in -

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United states was published under Article 21(2) (a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-3, 10-19, 35, 46 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Pelc et al. (6,203,759). Pelc et al. teaches a microvolume liquid handling system. The system is best shown in Figures 1 and 7 and described in columns 5-6. The system includes a positive displacement pump (12) and a microdispenser (16) with a nozzle tip (63). Tubing (18) connects the positive displacement pump to the pressure sensor and the pressure sensor to the microdispenser. The positive displacement pump moves a system liquid (20) through the tubing. After the system is loaded with liquid (20), an air gap of know volume is provided which pushes the liquid to be dispensed through the system and out of the nozzle without contacting the surface that is receiving the liquid. The positive displacement pump (12) includes stepper motors (28, 29) and a syringe (30). Stepper motor (28) causes motion causes the plunger (34) to move up or

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down by a specified number of discrete steps inside the glass tube. These discrete steps are used to measure and dispense picoliter droplets of fluid.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pelc et al. (6,203,759) in view of Kaneko (5,897,304). Pelc teaches every element of claim 48 except for a

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linear servo motor. Kaneko teaches a flow through pump which is controlled by a linear servo motor assembly (32) that drives the pump pistons in tandem. It would have been obvious to combine the linear servo motor assembly of Kaneko with the syringe pump of Pelc. Linear servo motors provide precise control of moving parts in automated systems. Adding the linear servo motor to the pump of Pelc would allow for greater control of the syringe pump when dispensing fluids.

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelc et al. Pelc teaches every element of claims 8 and 9 except for the dimensions of the tip cited in these claims. It is the contention of the Examiner, however, that it would have been obvious to one of ordinary skill in the art to make the wall as thin as possible in the dispenser in order to take up as little room as possible in the dispensing manifold.

7. Claims 30-32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelc et al. (6,203,759) in view of Koike (5,660,792). Pelc teaches every element of claims 30-32 and 34 except for the interchangeable dispensing element and the tip dimensions recited in claim 32. Pelc does show the use of a bank of 8 dispensers (Figure 7). Koike teaches interchangeable dispensing elements (16 and 18) that have their own feeds (Figure 5) in an automatic device for processing fluids through solid phase extraction tubes. It would have been obvious to one of ordinary skill in the art to combine the interchangeable dispensers of Koike with the dispenser of

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Pelc. The addition of multiple dispensers would cut processing time and allow for the addition of different reactants or fluids simply by changing the dispenser. As to the dimensions cited by applicant, it would have been obvious to provide as thin a wall as possible in the dispenser in order to take up as little room as possible in the dispensing manifold.

8. Claims 4-6 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelc et al (6,203,759) in view of Brown (5,853,894). Pelc teaches every element of claims 4-6 and 36-39 except for a hydrophobic tip and the tip dimensions recited in these claims. Brown teaches a hydrophobic coating polymer (PTFE – col. 5, l. 46) which is used to coat laboratory elements, thus conferring a low surface energy to the surface. In column 5, Brown recites the many elements which may be coated according to their invention and includes “..vials, flasks, test tubes, pipette tips, microcentrifuge tubes...”. It would have been obvious to one of ordinary skill in the art to combine the coating of Brown with the system of Koike. The lower surface energy provided by the coating would help prevent fluids sticking to the tip of the dispensing element. As to the dimensions cited by applicant, it would have been obvious to provide as thin a wall as possible in the dispenser in order to take up as little room as possible in the dispensing manifold.

9. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pelc et al. (6,203,759) and Koike (5,660,792) and further in view of Brown (5,853,894). Pelc et al. (6,203,759) and Koike (5,660,792), as combined in paragraph 5 above, teach every element of

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claim 33 except for dispense tips of PTFE. Brown teaches a hydrophobic coating polymer (PTFE – col. 5, l. 46) which is used to coat laboratory elements, thus conferring a low surface energy to the surface. In column 5, Brown recites the many elements which may be coated according to their invention and includes “..vials, flasks, test tubes, pipette tips, microcentrifuge tubes...”. It would have been obvious to one of ordinary skill in the art to combine the coating of Brown with the system of Koike. The lower surface energy provided by the coating would help prevent fluids sticking to the tip of the dispensing element.

Response to Arguments

10. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection. The Examiner agrees that Koike does not teach the limitations of being configured for non-contact deposition from a conduit path that remains open and unconstricted, but the Examiner believes he has addressed this issue with the new rejection under Pelc.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Papen et al. (6,220,075) teaches a method and apparatus for dispensing small volumes.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne K. Handy whose telephone number is (703)-305-0211. The examiner can normally be reached on Monday-Friday from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden, can be reached on (703)-308-4037. The fax phone number for the organization where this application or proceeding is assigned is (703)-772-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0661.

dkh

May 13, 2003


Jill Warden
Supervisory Patent Examiner
Technology Center 1700